

## Gunter, Jason

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**From:** Seabourne, Rocky <rseabourne@doerun.com>  
**Sent:** Friday, January 15, 2016 9:25 AM  
**To:** 'brandon.wiles@dnr.mo.gov'; Gunter, Jason; 'Kevin Lombardozzi' (kevinl@VALHI.NET); Matt Whitwell (mwhitwell@parkhillsmo.net); Montgomery, Michael; Neaville, Chris; 'Norman Lucas (cityhall@i1.net)'; Ty Morris; Yingling, Mark  
**Subject:** Emailing: National Progress report Dec.  
**Attachments:** Attached Image; 2015-12-07 NAT UAO Pace Lab Report.pdf

Your message is ready to be sent with the following file or link attachments:

National Progress report Dec.

Note: To protect against computer viruses, e-mail programs may prevent sending or receiving certain types of file attachments. Check your e-mail security settings to determine how attachments are handled.

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Superfund

1/15/16

52



*Remediation Group*

**Rocky Seabourne**  
**General Supervisor Land and Remediation**  
**rseabourne@doerun.com**

January 10, 2016

Mr. Jason Gunter  
Remedial Project Manager  
U.S. Environmental Protection Agency  
Region 7 - Superfund Branch  
11201 Renner Blvd.  
Lenexa, KS 66219

**Re: National Mine Tailings Site Progress Report**

Dear Mr. Gunter:

As required by Article VI, Section 51 of the Unilateral Administrative Order (Docket No.CERCLA-07-2006-0231) for the referenced project and on behalf of The Doe Run Company and NL Industries, Inc., the progress report for the period December 1, 2015 through December 31, 2015 is enclosed. If you have any questions or comments, please call me at 573-244-8136.

Sincerely,

Rocky Seabourne  
General Supervisor Land and Remediation

Enclosure

- c: Mark Yingling – TDRC (electronic only)  
Chris Neaville – TDRC (electronic only)  
Michael Montgomery – TDRC (electronic only)  
Kevin Lombardozzi – NL Industries, Inc.  
Matt Whitwell – City of Park Hills  
Norm Lucas – Park Hills – Leadington Chamber of Commerce  
Brandon Wiles – MDNR  
Ty Morris – Barr Engineering

**National Mine Tailings Site**  
Park Hills, Missouri  
**Removal Action - Monthly Progress Report**  
Period: December 1, 2015 – December 31, 2015

**1. Actions Performed and Problems Encountered This Period:**

- a. Work continued on the development of the Post Removal Site Control Plan for the site.

**2. Analytical Data and Results Received This Period:**

- a. During this period, water samples were collected at the sampling locations identified in Appendix C of the Removal Action Work Plan where water was present. Copies of the analytical results from the last sampling event are included with this progress report.

**3. Developments Anticipated and Work Scheduled for Next Period:**

- a. Finalize and submit the Post Removal Site Control Plan for the site.
- b. Continue developing the Removal Action Report and the record drawings.
- c. Complete the water sampling activities.

**4. Changes in Personnel:**

- a. None.

**5. Issues or Problems Arising This Period:**

- a. None.

**6. Resolution of Issues or Problems Arising This Period:**

- a. None.



December 21, 2015

Amy Sanders  
The Doe Run Company  
P. O. Box 500  
Viburnum, MO 65566

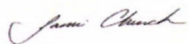
RE: Project: NATIONAL UAO (NATIONAL)  
Pace Project No.: 60208928

Dear Amy Sanders:

Enclosed are the analytical results for sample(s) received by the laboratory between December 08, 2015 and December 10, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jamie Church  
jamie.church@pacelabs.com  
Project Manager

Enclosures



## REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.

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Lenexa, KS 66219

(913)599-5665

## CERTIFICATIONS

Project: NATIONAL UAO (NATIONAL)

Pace Project No.: 60208928

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### Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219

WY STR Certification #: 2456.01

Arkansas Certification #: 15-016-0

Illinois Certification #: 003097

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212008A

Oklahoma Certification #: 9205/9935

Texas Certification #: T104704407

Utah Certification #: KS00021

Kansas Field Laboratory Accreditation: # E-92587

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## SAMPLE SUMMARY

Project: NATIONAL UAO (NATIONAL)  
Pace Project No.: 60208928

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60208928001	40522 / NAT EAST	Water	12/07/15 11:02	12/08/15 06:15
60208928002	40522 / NAT EAST	Water	12/09/15 08:37	12/10/15 06:16

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### SAMPLE ANALYTE COUNT

Project: NATIONAL UAO (NATIONAL)

Pace Project No.: 60208928

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60208928001	40522 / NAT EAST	EPA 200.7	JGP	6	PASI-K
		EPA 200.7	JGP	3	PASI-K
		SM 2540C	LDB	1	PASI-K
		SM 2540D	LDB	1	PASI-K
		SM 4500-H+B	LJS	1	PASI-K
		EPA 300.0	RAB	1	PASI-K
		SM 5310C	JMC1	1	PASI-K
60208928002	40522 / NAT EAST	SM 2540F	CRS	1	PASI-K

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## ANALYTICAL RESULTS

Project: NATIONAL UAO (NATIONAL)

Pace Project No.: 60208928

Sample: 40522 / NAT EAST Lab ID: 60208928001 Collected: 12/07/15 11:02 Received: 12/08/15 06:15 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b> Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Cadmium	<0.56	ug/L	5.0	0.56	1	12/09/15 15:45	12/10/15 15:34	7440-43-9	
Calcium	99400	ug/L	100	5.2	1	12/09/15 15:45	12/10/15 15:34	7440-70-2	
Lead	8.2	ug/L	5.0	1.9	1	12/09/15 15:45	12/10/15 15:34	7439-92-1	
Magnesium	54600	ug/L	50.0	13.3	1	12/09/15 15:45	12/10/15 15:34	7439-95-4	
Total Hardness by 2340B	473000	ug/L	500		1	12/09/15 15:45	12/10/15 15:34		
Zinc	161	ug/L	50.0	2.6	1	12/09/15 15:45	12/10/15 15:34	7440-66-6	
<b>200.7 Metals, Dissolved (LF)</b> Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Cadmium, Dissolved	<0.56	ug/L	5.0	0.56	1	12/11/15 16:00	12/14/15 14:05	7440-43-9	
Lead, Dissolved	6.3	ug/L	5.0	1.9	1	12/11/15 16:00	12/14/15 14:05	7439-92-1	
Zinc, Dissolved	128	ug/L	50.0	2.6	1	12/11/15 16:00	12/14/15 14:05	7440-66-6	
<b>2540C Total Dissolved Solids</b> Analytical Method: SM 2540C									
Total Dissolved Solids	595	mg/L	5.0	5.0	1		12/09/15 08:46		
<b>2540D Total Suspended Solids</b> Analytical Method: SM 2540D									
Total Suspended Solids	24.0	mg/L	5.0	5.0	1		12/10/15 10:29		
<b>4500H+ pH, Electrometric</b> Analytical Method: SM 4500-H+B									
pH at 25 Degrees C	8.1	Std. Units	0.10	0.10	1		12/08/15 13:50		H6
<b>300.0 IC Anions 28 Days</b> Analytical Method: EPA 300.0									
Sulfate	214	mg/L	20.0	4.7	20		12/09/15 17:56	14808-79-8	
<b>5310C TOC</b> Analytical Method: SM 5310C									
Total Organic Carbon	1.0	mg/L	1.0	0.50	1		12/21/15 13:32	7440-44-0	

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## ANALYTICAL RESULTS

Project: NATIONAL UAO (NATIONAL)

Pace Project No.: 60208928

Sample: 40522 / NAT EAST      Lab ID: 60208928002      Collected: 12/09/15 08:37      Received: 12/10/15 06:16      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
2540F Total Settleable Solids      Analytical Method: SM 2540F									
Total Settleable Solids	<0.20	mL/L/hr	0.20	0.20	1		12/11/15 07:25		

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Date: 12/21/2015 03:58 PM

Page 6 of 19

## QUALITY CONTROL DATA

Project: NATIONAL UAO (NATIONAL)

Pace Project No.: 60208928

QC Batch: MPRP/34191

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 Metals, Total

Associated Lab Samples: 60208928001

METHOD BLANK: 1681035

Matrix: Water

Associated Lab Samples: 60208928001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cadmium	ug/L	<0.56	5.0	0.56	12/10/15 14:07	
Calcium	ug/L	<5.2	100	5.2	12/10/15 14:07	
Lead	ug/L	<1.9	5.0	1.9	12/10/15 14:07	
Magnesium	ug/L	<13.3	50.0	13.3	12/10/15 14:07	
Total Hardness by 2340B	ug/L	8.8J	500		12/10/15 14:07	
Zinc	ug/L	<2.6	50.0	2.6	12/10/15 14:07	

LABORATORY CONTROL SAMPLE: 1681036

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium	ug/L	1000	964	96	85-115	
Calcium	ug/L	10000	9480	95	85-115	
Lead	ug/L	1000	1010	101	85-115	
Magnesium	ug/L	10000	9430	94	85-115	
Total Hardness by 2340B	ug/L		62500			
Zinc	ug/L	1000	970	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1681037 1681038

Parameter	Units	60208894001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Cadmium	ug/L	<0.56	1000	1000	971	984	97	98	70-130	1	20
Calcium	ug/L	35800	10000	10000	43700	44500	80	87	70-130	2	20
Lead	ug/L	<1.9	1000	1000	1000	1010	100	101	70-130	1	20
Magnesium	ug/L	20600	10000	10000	29100	29600	86	90	70-130	2	20
Total Hardness by 2340B	ug/L	174000			229000	233000				2	
Zinc	ug/L	105	1000	1000	1060	1080	96	97	70-130	1	20

MATRIX SPIKE SAMPLE: 1681039

Parameter	Units	60208894002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cadmium	ug/L	<0.56	1000	980	98	70-130	
Calcium	ug/L	33600	10000	43600	101	70-130	
Lead	ug/L	<1.9	1000	1010	101	70-130	
Magnesium	ug/L	19800	10000	28800	90	70-130	
Total Hardness by 2340B	ug/L	165000		228000			
Zinc	ug/L	<2.6	1000	972	97	70-130	

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## QUALITY CONTROL DATA

Project: NATIONAL UAO (NATIONAL)

Pace Project No.: 60208928

QC Batch: MPRP/34226

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 Metals, Dissolved

Associated Lab Samples: 60208928001

METHOD BLANK: 1683110

Matrix: Water

Associated Lab Samples: 60208928001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cadmium, Dissolved	ug/L	<0.56	5.0	0.56	12/14/15 13:34	
Lead, Dissolved	ug/L	<1.9	5.0	1.9	12/14/15 13:34	
Zinc, Dissolved	ug/L	3.7J	50.0	2.6	12/14/15 13:34	

LABORATORY CONTROL SAMPLE: 1683111

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium, Dissolved	ug/L	1000	1000	100	85-115	
Lead, Dissolved	ug/L	1000	1060	106	85-115	
Zinc, Dissolved	ug/L	1000	1050	105	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1683112 1683113

Parameter	Units	60208894001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Cadmium, Dissolved	ug/L	0.57J	1000	1000	981	1030	98	103	70-130	5 20	
Lead, Dissolved	ug/L	<1.9	1000	1000	1020	1070	102	107	70-130	5 20	
Zinc, Dissolved	ug/L	92.1	1000	1000	1110	1160	101	107	70-130	5 20	

MATRIX SPIKE SAMPLE: 1683114

Parameter	Units	60208894002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cadmium, Dissolved	ug/L	<0.56	1000	1020	102	70-130	
Lead, Dissolved	ug/L	<1.9	1000	1050	105	70-130	
Zinc, Dissolved	ug/L	19.7J	1000	1070	105	70-130	

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## QUALITY CONTROL DATA

Project: NATIONAL UAO (NATIONAL)

Pace Project No.: 60208928

QC Batch: WET/58875

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 60208928001

METHOD BLANK: 1680744

Matrix: Water

Associated Lab Samples: 60208928001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	12/09/15 08:43	

LABORATORY CONTROL SAMPLE: 1680745

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	998	100	80-120	

SAMPLE DUPLICATE: 1680753

Parameter	Units	60208747001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1940	2010	3	10	

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## QUALITY CONTROL DATA

Project: NATIONAL UAO (NATIONAL)

Pace Project No.: 60208928

QC Batch: WET/58907

Analysis Method: SM 2540D

QC Batch Method: SM 2540D

Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 60208928001

METHOD BLANK: 1681529

Matrix: Water

Associated Lab Samples: 60208928001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Suspended Solids	mg/L	<5.0	5.0	5.0	12/10/15 10:18	

SAMPLE DUPLICATE: 1681530

Parameter	Units	60209044001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	22.0	23.0	4	10	

SAMPLE DUPLICATE: 1681531

Parameter	Units	60208899001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	122	120	2	10	

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**QUALITY CONTROL DATA**

Project: NATIONAL UAO (NATIONAL)

Pace Project No.: 60208928

QC Batch: WET/58829

Analysis Method: SM 4500-H+B

QC Batch Method: SM 4500-H+B

Analysis Description: 4500H+B pH

Associated Lab Samples: 60208928001

SAMPLE DUPLICATE: 1679784

Parameter	Units	60208572001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	6.8	6.8	0	5	H6

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### QUALITY CONTROL DATA

Project: NATIONAL UAO (NATIONAL)  
Pace Project No.: 60208928

QC Batch: WETA/37268 Analysis Method: EPA 300.0  
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions  
Associated Lab Samples: 60208928001

METHOD BLANK: 1681130 Matrix: Water  
Associated Lab Samples: 60208928001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	<0.24	1.0	0.24	12/09/15 13:34	

LABORATORY CONTROL SAMPLE: 1681131

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	4.9	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1681132 1681133

Parameter	Units	60208849001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Sulfate	mg/L	2350	1000	1000	3250	3290	90	94	80-120	1	15

MATRIX SPIKE SAMPLE: 1681134

Parameter	Units	60208811002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	75.8	25	98.1	89	80-120	

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## QUALITY CONTROL DATA

Project: NATIONAL UAO (NATIONAL)

Pace Project No.: 60208928

QC Batch: WETA/37424

Analysis Method: SM 5310C

QC Batch Method: SM 5310C

Analysis Description: 5310C Total Organic Carbon

Associated Lab Samples: 60208928001

METHOD BLANK: 1688024

Matrix: Water

Associated Lab Samples: 60208928001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	<0.50	1.0	0.50	12/21/15 08:19	

LABORATORY CONTROL SAMPLE: 1688025

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	5	4.5	90	80-120	

MATRIX SPIKE SAMPLE: 1688026

Parameter	Units	60208203001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	18.1	10	23.1	50	80-120	M1

SAMPLE DUPLICATE: 1688027

Parameter	Units	60208576003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Carbon	mg/L	10.3	10.3	0	25	

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## QUALIFIERS

Project: NATIONAL UAO (NATIONAL)

Pace Project No.: 60208928

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### LABORATORIES

PASI-K Pace Analytical Services - Kansas City

### ANALYTE QUALIFIERS

H6 Analysis initiated outside of the 15 minute EPA recommended holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: NATIONAL UAO (NATIONAL)  
Pace Project No.: 60208928

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60208928001	40522 / NAT EAST	EPA 200.7	MPRP/34191	EPA 200.7	ICP/25121
60208928001	40522 / NAT EAST	EPA 200.7	MPRP/34226	EPA 200.7	ICP/25139
60208928001	40522 / NAT EAST	SM 2540C	WET/58875		
60208928001	40522 / NAT EAST	SM 2540D	WET/58907		
60208928002	40522 / NAT EAST	SM 2540F	WET/58927		
60208928001	40522 / NAT EAST	SM 4500-H+B	WET/58829		
60208928001	40522 / NAT EAST	EPA 300.0	WETA/37268		
60208928001	40522 / NAT EAST	SM 5310C	WETA/37424		

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# Sample Condition Upon Receipt

WO#: 60208928



60208928

Client Name: DRC

Courier: FedEx ☐ UPS ☐ VIA ☒ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Other ☐ Client ☐

Tracking #: \_\_\_\_\_ Pace Shipping Label Used? Yes ☐ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☒ Other ☐

Thermometer Used: CF +0.8 T-239 / CF +0.7 T-262

Type of Ice: Wet Blue ☐ None ☐ Samples received on ice, cooling process has begun.  
(circle one)

Cooler Temperature: 2-1

Date and initials of person examining contents: PM 12/18/15

Temperature should be above freezing to 6°C

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody filled out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler name & signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time analyses (<72hr):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6. <u>PHS-S</u>
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	8. <u>Insufficient unpreserved Volume.</u>
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	12.
Sample labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Includes date/time/ID/analyses	Matrix: <u>WT</u>	13.
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14.
Exceptions: VOA, Coliform, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Lot # of added preservative
Pace Trip Blank lot # (if purchased):		15.
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
		16.
Project sampled in USDA Regulated Area:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	17. List State:
Additional labels attached to 5035A vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	18.

## Client Notification/ Resolution:

Copy COC to Client? Y / N

Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_ Per Amy Sanders, cancel SS they will recollect. JLC 12/8/15

Project Manager Review: \_\_\_\_\_

Date: 12/8/15



**CHAIN-OF-CUSTODY / Analytical Request Document**  
The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

**Section A**

Required Client Information:

Company: The Doe Run Company  
Address: PO Box 500  
Email To: [asanders@doerun.com](mailto:asanders@doerun.com)  
Phone: (573) 689-4535 Fax: (573) 244-8179  
Requested Due Date/TAT: 5 To 7 Days

**Section B**

Required Project Information:

Report To: Amy Sanders  
Copy To:  
Purchase Order No.:  
Project Name: National UAO (National)  
Project Number:

**Section C**

Invoice Information:

Attention: Amy Sanders  
Company Name: The Doe Run Company  
Address: PO Box 500, Viburnum, MO 65566  
Pace Quote Reference:  
Pace Project Manager:  
Pace Profile #:

**REGULATORY AGENCY**

☐ NPDES ☐ GROUND WATER  
☐ UST ☐ RCRA

Site Location: MO  
STATE:

Page: 1 of 1

COC#: 3076

60208928

Section C Required Sample Information		Valid Matrix Codes		COLLECTED DATE/TIME		Bottles / Preservatives		Requested Analysis Filtered (Y/N)																SEMO Lab Project No / Lab ID.										
ITEM #	SAMPLE ID (A-Z, 0-9 / .-) Sample IDs MUST BE UNIQUE	MATRIX WATER WASTE WATER SOL/SOLO	CODE WT WW SL	DATE (mm/dd/yy)	TIME (Military)	DATE (mm/dd/yy)	TIME (Military)	Total # OF CONTAINERS	250 mL Unpreserved	500 mL Unpreserved	1 L Unpreserved	250 mL Nitric	250 mL Amber Glass H <sub>2</sub> SO <sub>4</sub>	250 mL Plastic H <sub>2</sub> SO <sub>4</sub>	1000 mL Amber HCL	250 mL ZnAc/NaOH	500 mL Amber Glass H <sub>2</sub> SO <sub>4</sub>	*See Additional Comments Below  Analysis Test ↓																
																		COMPOSITE START	COMPOSITE END / GRAB	CD-D, PB-D, ZN-D, HARD, PH, SO <sub>4</sub> , SS, TDS, TOC, TSS	Nat East													
1	40522 1A635 <sup>2-0</sup> 1B355 <sup>2-0</sup> 1B355 <sup>2-0</sup> 1B355 <sup>2-0</sup>	WW	G			12/07/15	1102	5	1	1	1	1	1						CD-T, PB-T, ZN-T															
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ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME (Military)	ACCEPTED BY / AFFILIATION	DATE	TIME (Military)	SAMPLE CONDITIONS
200.7 Total Recoverable and Dissolved Metals	Larry Hopkins	12/7/15	1235	John P. HSE	12/8/15	0615	2.1

SAMPLER NAME AND SIGNATURE		Temp in °C	pH in SU	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)
PRINT Name of SAMPLER:	Larry Hopkins				
SIGNATURE of SAMPLER:	<i>Larry Hopkins</i>	DATE Signed (MM/DD/YY):	12/7/15		





Sample Condition Upon Receipt

WO#: 60208928



60208928

Client Name: DRC

Courier: FedEx ☐ UPS ☐ VIA ☒ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Other ☐ Client ☐

Tracking #: \_\_\_\_\_ Pace Shipping Label Used? Yes ☐ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☒ Other ☐

Thermometer Used: CF +0.8 OF +0.7  
T-239 T-262

Type of Ice: Yes Blue None ☐ Samples received on ice, cooling process has begun.  
(circle one)

Cooler Temperature: 4.8

Date and initials of person examining contents: 12/10/15

Temperature should be above freezing to 6°C

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody filled out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler name & signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time analyses (<72hr):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6. <u>Sett Sol</u>
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10. <u>This is the re-collect for 60208928-SS</u>
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11.
Unpreserved 5035A soils frozen w/in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	12.
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13. <u>container collected 12/10/15 @ 0837</u>
Sample labels match COC:	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14.
Includes date/time/ID/analyses	Matrix: <u>WT</u>	15.
All containers needing preservation have been checked.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	17.
Exceptions: VOA, Coliform, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	18.
Trip Blank present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Pace Trip Blank lot # (if purchased):		
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Project sampled in USDA Regulated Area:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

Client Notification/ Resolution:

Copy COC to Client? Y / N

Field Data Required? Y / N

Person Contacted: \_\_\_\_\_

Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: \_\_\_\_\_

Date: 12/10/15



# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

## Section A

Required Client Information:

Company: The Doe Run Company  
Address: PO Box 500

Email To: [asanders@doerun.com](mailto:asanders@doerun.com)

Phone: (573) 689-4535 Fax: (573) 244-8179

Requested Due Date/TAT: 5 To 7 Days

## Section B

Required Project Information:

Report To: Amy Sanders  
Copy To:

Purchase Order No.:

Project Name: National UAO (National)

Project Number:

## Section C

Invoice Information:

Attention: Amy Sanders

Company Name: The Doe Run Company

Address: PO Box 500, Viburnum, MO 65566

State: MO

City: Viburnum

Zip: 65566

## REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER  
☐ UST ☐ RCRA

Site Location:

STATE: MO

Page: 1 of 1

COC#: 3076

60208928

Section C Required Sample Information		Valid Matrix Codes		COLLECTED DATE/TIME		Bottles / Preservatives		Requested Analysis Filtered (Y/N)																SEMO Lab Project No./ Lab ID.													
ITEM #	SAMPLE ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE	MATRIX WATER WASTE WATER SOLID	CODE WT WW SL	SAMPLE TYPE (0=GRAB 1=COMPOSITE)	COMPOSITE START / COMPOSITE END / GRAB				SAMPLE TEMP AT COLLECTION	Total # OF CONTAINERS	250 mL Unpreserved	500 mL Unpreserved	1 L Unpreserved	250 mL Nitric	250 mL Amber Glass H <sub>2</sub> SO <sub>4</sub>	250 mL Plastic H <sub>2</sub> SO <sub>4</sub>	1000 mL Amber HCL	250 mL ZnAc/NaOH	500 mL Amber Glass H <sub>2</sub> SO <sub>4</sub>	*See Additional Comments Below  Analysis Test ↓																	
					DATE (month/day)	TIME (Military)	DATE (month/day)	TIME (Military)												CD-D, PB-D, ZN-D, HARD, PH, SO <sub>4</sub> , SS, TDS, TOC, TSS																	
1	40522 1A635 <sup>2</sup> 1B355 <sup>2</sup> 1B920 <sup>2</sup> 1A014	WW	G					12/07/15	1102		1	1	1	1	1						CD-T, PB-T, ZN-T	BPIU															Nat East
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ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
200.7 Total Recoverable and Dissolved Metals	Larry Hopkins	12/7/15	1234	[Signature]	12/8/15	0615	Temp in °C	pH in SU	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)
					12/14/15	0616	2.1	4.8	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER:

DATE Signed

(MM/DD/YY):

12/7/15